

Wireless 802.11g/b USB Stick



User Manual

Version 1.0

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This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC INFORMATION

The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:

The equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to overcome the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The equipment is for home or office use.

R&TTE Compliance Statement

This equipment complies with all the requirements of the Directive 1999/5/EC of the European parliament and the council of 9 March 1999 on radio equipment and telecommunication terminal Equipment and the mutual recognition of their conformity(R&TTE).

The R&TTE Directive repeals and replaces in the directive 98/13/EEC. As of April 8, 2000.

IMPORTANT NOTE

FCC RF Radiation Exposure Statement: This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. **This device has been tested for compliance with FCC RF Exposure (SAR)**

limits in typical laptop configurations and This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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INTRODUCTION

Being five times faster than the speed of 802.11b network standard devices, the innovative 802.11g standard lets the wireless network become incredibly easier and faster (up to 54Mbps) than ever. Your Wireless 802.11g/b USB Stick surely will bring you into such a high-speed network sphere. This document describes how to install your Wireless 802.11g/b USB Stick, which aims to let your computer communicate with 802.11 networks quickly and seamlessly. Wireless LAN is local area networking without wires, which uses radio frequencies to transmit and receive data between PCs or other network devices. Additionally, wireless LAN is able to configure either independent networks, which is also known as peer-to-peer or ad-hoc network, or infrastructure networks. The former is suitable for small or temporary peer-to-peer configurations, and the later is offering fully distributed data connectivity via micro cells and roaming.

To obtain most benefits your Wireless 802.11g/b USB Stick provides, please read this manual carefully before using it.

1.1 Features

With the Wireless 802.11g/b USB Stick, you can

- ❑ establish a wireless connection without the hassles and cost of cabling
- ❑ operate Ad-Hoc or Infrastructure mode
- ❑ utilize up to 128-bit WEP encryption
- ❑ enjoy high-speed data transfer rate up to 54 Mbps
- ❑ employ automatic data rate switching which offers maximum reliability, throughput and connectivity
- ❑ possess the network's range up to 100 meters indoor and 400 meters outdoor
- ❑ monitor and configure the network via the supplied friendly-interfaced application –

Wireless-G Configuration Tool

1.2 Package Contents

Before starting the installation, please make sure the package you purchased includes the following items:

- * One Wireless 802.11g/b USB Stick
- * One Setup Wizard CD with User Manual
- * One Quick Installation Guide

If any of the items listed above is missing or damaged, please contact your distributor.

1.3 System Requirements

To properly operate your Wireless 802.11g/b USB Stick, your computer must meet the following minimum requirements:

- * 32 MB RAM or above
- * A CD-ROM drive
- * 300 MHz processor or higher
- * Microsoft Windows 2000 or Windows XP
- * USB Port version 2.0

1.4 Your Wireless 802.11g/b USB Stick

Your Wireless 802.11g/b USB Stick should be located in the USB port of your computer, and it looks like the following picture:



Figure 1.4-1: Wireless 802.11g/b USB Stick

Concerning to the issue of orientation-controlling, Wireless 802.11g/b USB Stick allows you to twist and rotate the USB connector to meet your needs.



Figure 1.4-2: Rotate the USB Connector

INSTALLATION OF THE WIRELESS 802.11g/b USB STICK

It's free and easy for you to install your Wireless 802.11g/b USB Stick and the attached software – **Wireless-G Configuration Tool**. Simply with a few clicks of the mouse, you will succeed the completion of installation.

2.1 Installation Procedures

To have the Wireless 802.11g/b USB Stick operated appropriately, please read and go along with the instructions below carefully. Here we take Windows XP as an example.

- a) Plug your Wireless 802.11g/b USB Stick into a USB 2.0 port on your PC.
- b) Your system will detect the device, and the **Found New Hardware Wizard** dialog box will appear. Choose **Cancel** to proceed.



Figure 2.1-1: The **Found New Hardware Wizard** Dialog Box

- c) Insert the supplied Setup CD into your CD-ROM drive, and the Setup Wizard will run automatically. If it does not, please manually execute **AutoRun.exe**.
- d) From the prompted startup window, choose **Install Driver** to begin the installation.



Figure 2.1-2: The Startup Window

- e) Click **Next** in the **WLAN 802.11G USB** window to proceed. The system will start to copy the drivers found.

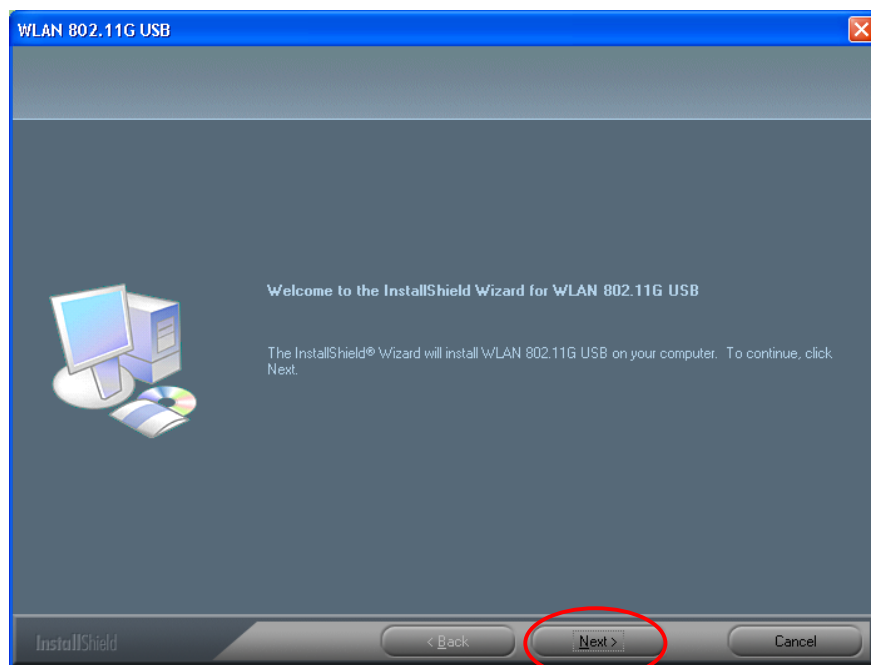


Figure 2.1-3: The 11Mbps Wireless LAN Window

- f) Windows will notify you that the driver has not passed the Windows Logo testing. Because the USB Stick has been tested to work with Windows XP, please choose **Continue Anyway** in the **Hardware Installation** dialog box.

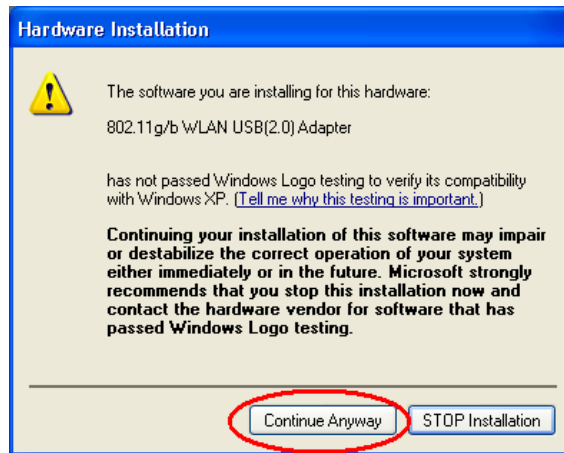


Figure 2.1-4: The **Hardware Installation** Dialog Box

- g) On the **Reboot** screen, you may choose either **Yes, I want to restart my computer now** or **No, I will restart my computer later**. Then click **Finish** to complete the installation.

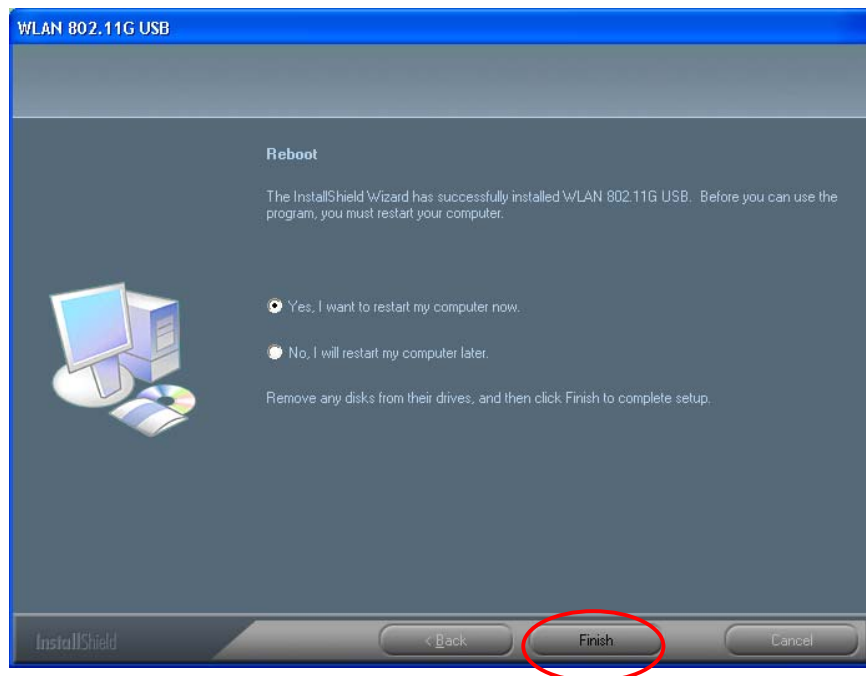


Figure 2.1-5: The **Reboot** Screen

Now you shall find the **Wireless-G Configuration Tool** tray icon, , appeared in the system tray. The installation is entirely finished at the moment.

Double-click the icon to launch the application and open the **Wireless Settings** dialog box, in which you may freely arrange your network connection afterwards.

For more details about **Wireless-G Configuration Tool**, please refer to [WLAN-G Configuration Tool Basics](#) in this manual.

2.2 Installation Notes - Windows XP

If your system is running Windows XP, you shall find that four tabs are contained in the **Wireless Settings** dialog box after you've followed the instructions above and successfully installed the drivers. However, normally, the dialog box should be consisted of seven tabs. This is because Windows XP has its built-in configuration tools – **Windows XP Zero Configuration** to assist you in networking activities. It is recommended to utilize the attached **Wireless-G Configuration Tool** to enjoy more benefits it will bring.

Thus, to employ your **Wireless-G Configuration Tool** under Windows XP, please proceed to the next step to change the default settings of **Windows Zero Configuration** to **Wireless-G Configuration Tool**.

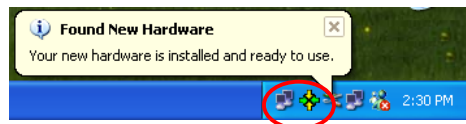


Figure 2.2-1: The **Wireless-G Configuration Tool** Tray Icon

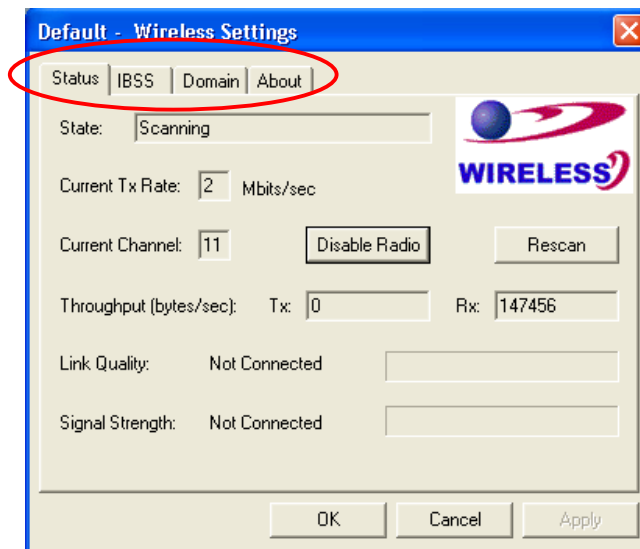


Figure 2.2-2: The **Wireless Settings** Dialog Box

- a) Right-click the **Network Connections** icon at the task bar to open the **Wireless Network Connection Status** dialog box, and then select **Properties**.

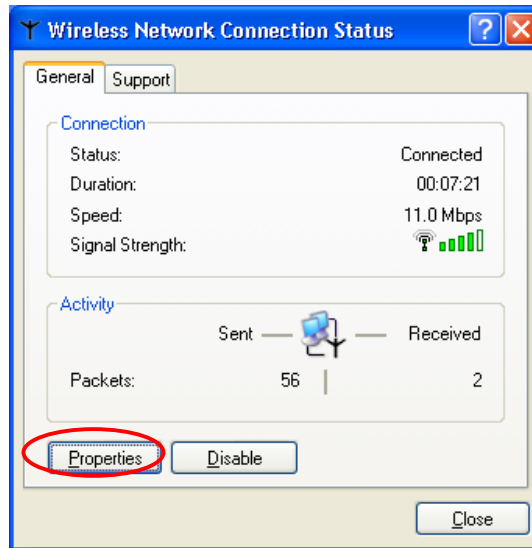


Figure 2.2-3: The **Wireless Network Connection Status** Dialog Box

- b) Choose the **Wireless Networks** tab in the **Wireless Network Connection Properties** dialog box, and remove the tick from the **Use Windows to configure my wireless network settings** checkbox.

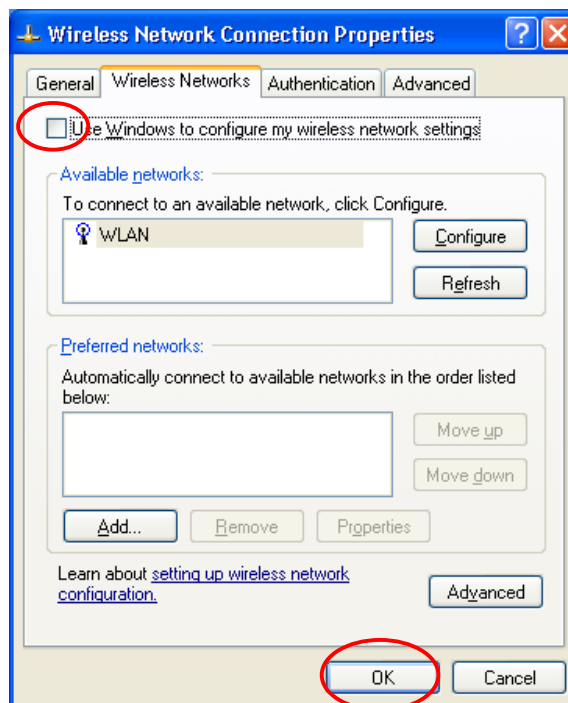


Figure 2.2-4: The **Wireless Network Connection Properties** Dialog Box

- c) Click **OK**. Now, you have successfully removed the **Windows Zero Configuration**.

To monitor and configure the network via **Wireless-G Configuration Tool**, double-click its tray icon, and you shall find seven tabs contained in the popped up **Wireless Settings** dialog box this time. For

more information on **Wireless-G Configuration Tool**, please refer to the chapter: [Wireless-G Configuration Tool Basics](#) below.

Note: If you wish to use Windows XP's built-in configuration tools – **Windows XP Zero Configuration**, please refer to the next chapter: **Configuration for Windows XP** to configure the WLAN USB Stick.

2.3 Verifying a Successful Installation

To confirm that the Wireless 802.11g/b USB Stick is properly installed, please follow the procedures below.

1. Right-click the **My Computer** desktop icon and choose **Properties** from the opened menu.
2. In the **System Properties** dialog box, click the **Hardware Device** tab, and then choose the **Device Manager** button.
3. In the opened window, expand **Network adapters** to find the USB Stick – **802.11g/b WLAN USB(2.0) Adapter**. Right-click over the item and choose **Properties**.
4. From the opened dialog box, on the **General** tab, find the descriptions under the **Device Status** pane to learn if the USB Stick is working properly. However, if there's an error message shown, please choose **Uninstall** from the opened menu while right-clicking the USB Adapter item, to which a red or yellow icon is attached beside, in the **Device Manager** dialog box. Then restart your system and go through the installation procedures again.

The following picture indicates a successful installation of the Wireless 802.11g/b USB Stick.

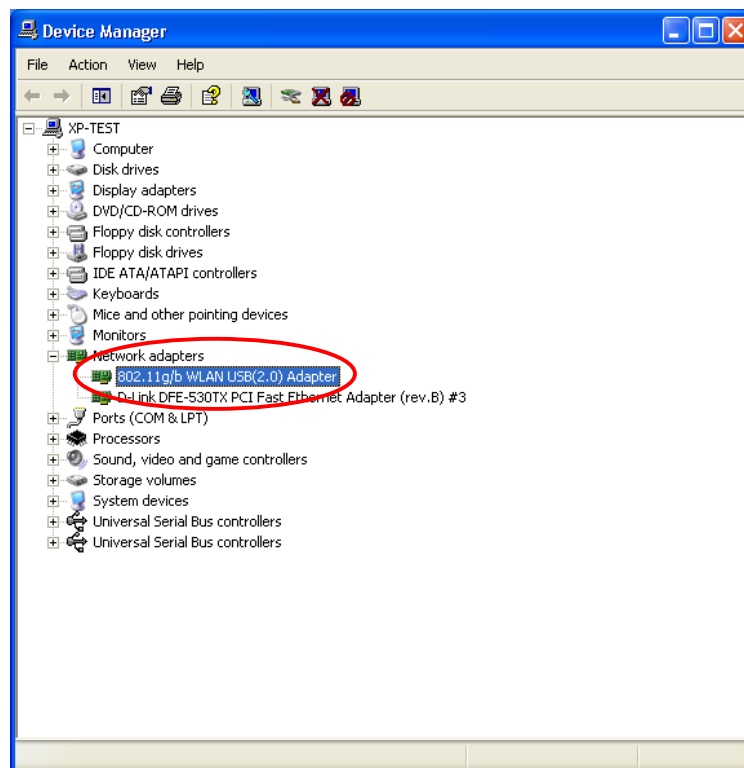


Figure 2.3-1: The **Device Manager** Dialog Box

CONFIGURATION FOR WINDOWS XP

As you have already known, Windows XP has its built-in configuration tools – **Windows XP Zero Configuration**, to assist you in some basic configurations of wireless network connection. The service starts right after the completion of the installation of Wireless 802.11g/b USB Stick, and you will find the icon automatically appears in your system tray like the following picture shows.



Figure 3-1: The **Wireless Network Connection** Icon

Please refer to the desired topics below to look for more details about utilizing your Wireless 802.11g/b USB Stick via **Wireless Zero Configuration**.

3.1 To Connect an Available Network via Wireless Zero Configuration

1. Double-click the **Wireless Network Connection** icon.
2. In the opened **Connect to Wireless Network** dialog box, the currently available networks are listed in the **Available networks** field. From the list, choose an item that you intend to associate with.
3. If the chosen entry requires a WEP encryption key and also automatically provides it, leave the **Network Key** field blank and then choose the **Connect** button to build the connection. Otherwise, you will need to manually enter the identical key in the **Network Key** field before clicking **Connect**.

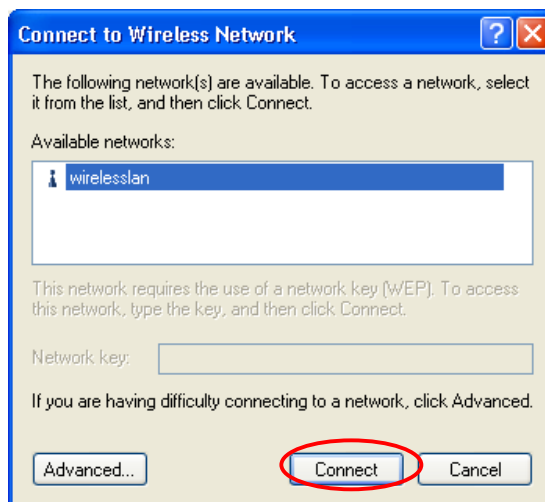


Figure 3.1-1: The **Connect to Wireless Network** Dialog Box

4. If the connection is established, there will be a pop-up message shown beside the **Wireless Network Connection** icon on the system tray. You could obtain the information on the status of connection from the message.

3.2 To Configure the Wireless Networks Properties

If you cannot establish a connection with the chosen entry or you wish to configure further wireless network connection settings, choose the **Advanced** button in the **Connect to Wireless Network** dialogue box.

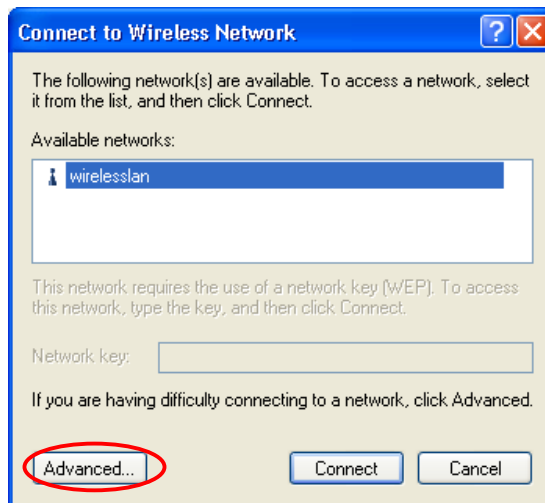


Figure 3.2-1: The **Connect to Wireless Network** Dialog Box

After clicking **Advanced**, you will enter into the **Wireless Networks** tab of the **Wireless Network Connection Properties** dialog box, in which three other tabs are found, including **General**, **Authentication**, and **Advanced**. The **Wireless Networks** tab includes almost the main settings for the networking connection. Thus, please check the descriptions below to learn more about the tab.

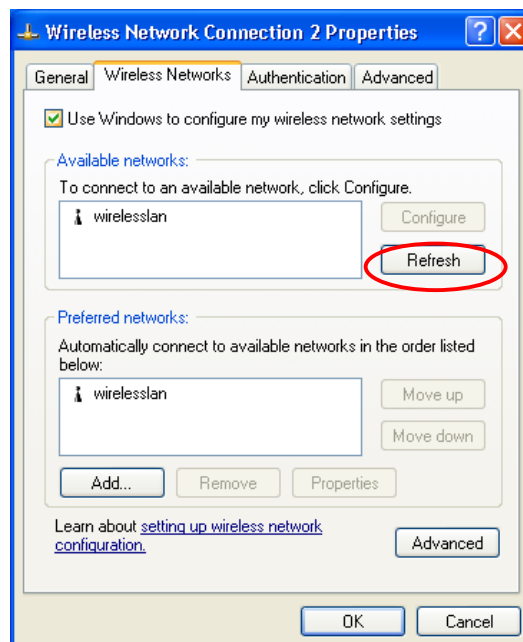


Figure 3.2-2: The **Wireless Network Connection Properties** Dialog Box

Note: For more detailed information about each tab, please refer to the Windows XP Online-Help.

The **Wireless Networks** tab is chiefly consisted of two sections: **Available networks** and **Preferred networks**.

- Under the **Available networks** area, all the available access points or Wireless LAN PC Card equipped computers are displayed. You may wish to click **Refresh** to update the list. If you choose any listed item in the field and then click **Configure**, the **Wireless Network Properties** dialog box will appear as Figure 3.2-3 shows. Check the descriptions below the figure to obtain more information about the dialog box.
- In the **Preferred networks** area, you could add any displayed networks to the list by clicking over the intended item from **Available networks** and then selecting the **Add** button. After clicking **Add**, the **Wireless Network Properties** dialog box will appear as Figure 3.2-3 displays. Note that to delete any item under the **Preferred networks** area, simply click on it and then select the **Remove** button. Additionally, you may adjust the items in the list by clicking the desired item and then choosing the **Move up** or **Move down** button. It is, however, important to realize that Windows XP will always choose the first one in the list to establish the networking connection.

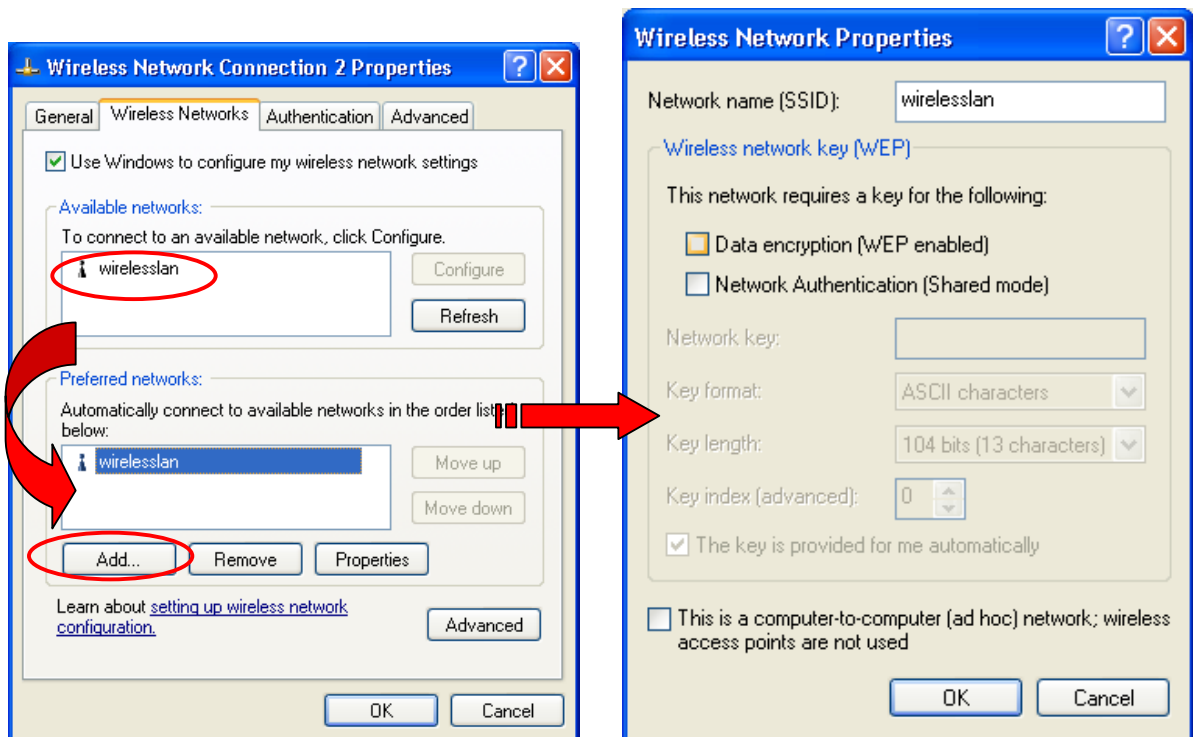


Figure 3.2-3: The **Wireless Network Properties** Dialog Box

Note: Once you choose an item from the **Preferred networks** list and then click **Properties**, the **Wireless Network Properties** dialog box will also be provoked.

- In the opened **Wireless Network Properties** dialog box, edit texts in the **Network Name (SSID)** field to identify the chosen network entry in the wireless LAN.
- If there's a need, go to the **Wireless network key (WEP)** area to set the keys as the associated access point or Wireless LAN PC Card equipped computer requests. To set WEP, select **Data encryption (WEP enabled)** and **Network Authentication**. Then enter the encryption key for the

network you intend to connect in the **Network key** filed. Prior to typing texts as the network key, you may wish to define the **Key format** and **Key length**. Click **OK** when you are finished, and you will return to the **Wireless Network Connection Properties** dialog box.

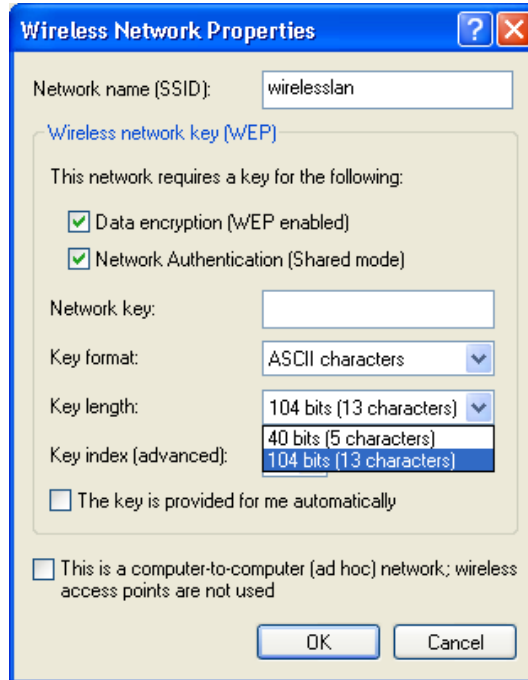


Figure 3.2-4: Enter WEP

Note: For more details of this tab, you may click the link: [setting up wireless network configuration](#) at the bottom of the **Wireless networks** tab to launch the Windows XP Online-Help.

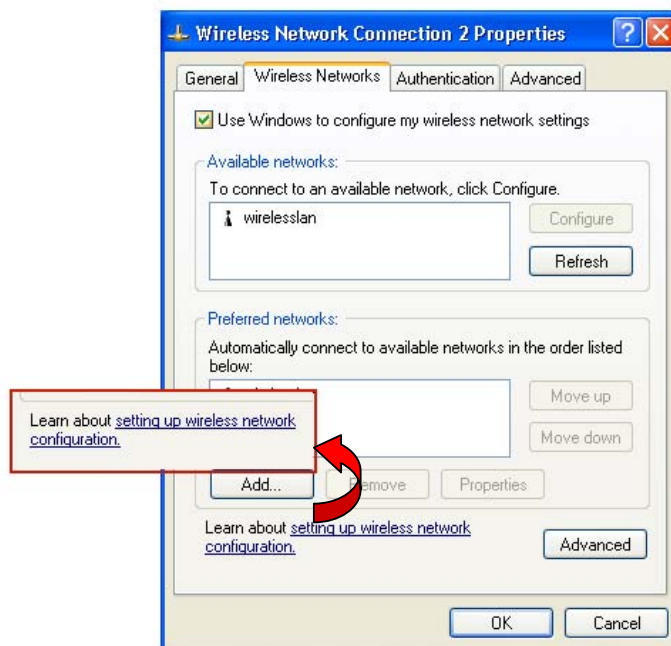


Figure 3.2-5: Setting up wireless network configuration

3.3 To Access to Certain Wireless Network Type

The default network type of **Windows XP Zero Configuration** is any available access points (Access Point mode) or WLAN Card equipped computers (Ad-Hoc mode) within the range at the given time. However, you may wish to connect to a certain network type sometimes. To change the default settings, click the **Advanced** button in the **Wireless Network Connection Properties** dialog box.

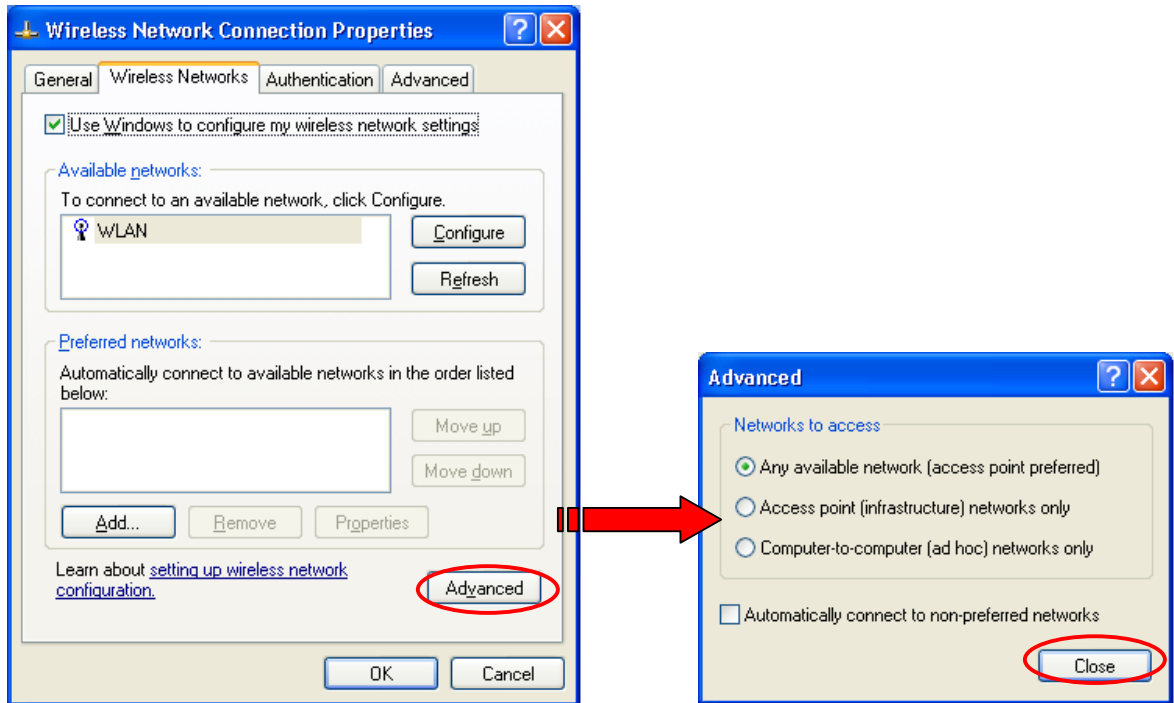


Figure 3.3-1 The **Advanced** Dialog Box:

The **Advanced** dialog box provides three options, **Any available network**, **Access point networks only**, and **Computer-to-computer networks only**. Choose one of them according to your need and click **Close** to finish. Then you will find under the **Available networks** area in the **Wireless Network Connection Properties** dialog box, only the specified networks are displayed.

Note: If you wish to use the attached application – **Wireless-G Configuration Tool** of the Wireless 802.11g/b USB Stick instead of Windows XP's **Wireless Zero Configuration**, please refer to **2.2 Installation Notes –Windows XP** in this manual to change the settings.

WIRELESS-G CONFIGURATION TOOL BASICS

After successfully installing the driver for your Wireless 802.11g/b USB Stick on your computer, you may see the **Wireless-G Configuration Tool** icon, , displayed in the system tray. To set configurations for your USB Stick, double-click the icon to open the **Wireless Settings** dialog box, in which seven tabs are contained, including **Status**, **Configuration**, **Encryption**, **Site Survey**, **IBSS**, **Domain**, and **About**. Each of them proffers different functions to assist you in configuring the connection to the networks.

In this chapter, four topics are offered: **Tray Icon**, **Right-Click Menu of the Tray Icon**, **Program Controls**, and **The Advanced Properties Tab**. Please refer to the preferred topic to obtain more information and enjoy vast advantages **Wireless-G Configuration Tool** brings.

4.1 Tray Icon

As long as you finish installing **Wireless-G Configuration Tool** on your computer system, you will see its icon, , shown at the right bottom corner of your screen. When you move the mouse cursor over it, the information on the current link quality is provided in the tips.

Furthermore, the color of the icon varies with the current state of your network connection. Check the list below to learn the definition of each color.

Icon	Quality
	Excellent Link Quality
	Data Frame Errors – Check WEP Settings
	Fair Link Quality
	Poor Link Quality or Not Linked
	Radio Off

Note: The blue icon indicates that you might have entered incorrect WEP keys. To solve the problems, choose the **Configuration** tab in the **Wireless Settings** dialog box to correct the keys for encryption.

4.2 Right-Click Menu of the Tray Icon

Right-clicking the **Wireless-G Configuration Tool** icon in the system tray will open a menu as the following picture:

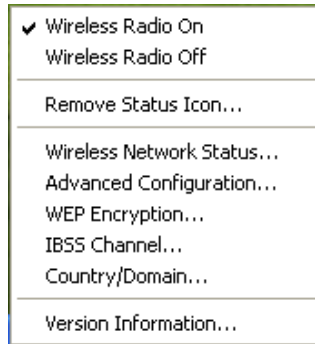


Figure 4.2-1: Right-Click Menu of the Tray Icon

Check the descriptions below to obtain detailed information about each command in the menu.

Wireless Radio On

Choose the **Wireless Radio On** command to receive the radio frequency signal.

Wireless Radio Off

Choosing the **Wireless Radio Off** command will stop receiving the radio frequency signal.

Remove Status Icon

If you do not wish to have the **Wireless-G Configuration Tool** icon displayed in the system tray, choose this command to open the **Remove Wireless Status Icon** dialog box, and then choose **Yes** to have the icon disappeared. The icon will reappear next time when you restart the computer. If you intend to remove it permanently, put a tick in the checkbox next to the **Remove Status Icon Permanently** option. To launch the utility hereafter, click **Start** on the taskbar, choose **Program** from the menu, and then point to **Wireless-G Configuration Tool** of the submenu of **WirelessLAN 11G USB Tools**. Clicking **No** will undo the removal.



Figure 4.2-2: The **Remove Wireless Status Icon** Dialog Box

Wireless Network Status

Choose this command to launch the **Status** tab of the **Wireless Settings** dialog box. For more details about the tab, please refer to **The Status Tab** in the **Program Controls** section below.

Advanced Configuration

Choose this command to launch the **Configuration** tab of the **Wireless Settings** dialog box. Please refer to **The Configuration Tab** in the **Program Controls** section below to gain more information about the tab.

WEP Encryption

Choose this command to launch the **Encryption** tab of the **Wireless Settings** dialog box. This tab offers you a number of options to maintain the secure management in a wireless LAN environment. See the explanations in **The Encryption Tab** under the **Program Controls** section below for more details.

IBSS Channel

Choosing this command will launch the **IBSS** tab of the **Wireless Settings** dialog box. To obtain more information about the tab, please refer to **The IBSS Tab** in the **Program Controls** section below.

Country/Domain

Choosing this command will launch the **Domain** tab of the **Wireless Settings** dialog box. Detailed information about this tab is presented in **The Domain Tab** of the **Program Controls** section.

Version Information

Choosing this command will launch the **About** tab of the **Wireless Settings** dialog box. The **About** tab reveals general information on your Wireless 802.11g/b USB Stick, including the release version of driver and the **Wireless-G Configuration Tool** and the USB network adapter's MAC Address.

4.3 Program Controls

When you double-click the **Wireless-G Configuration Tool** tray icon, the **Wireless Settings** dialog box will be prompted as the picture shows below. You may also launch this dialog box via clicking **Start** on the taskbar, choosing **Program** from the menu, and then pointing to **Wireless-G Configuration Tool** from the submenu of **WLAN-G TOOLS**.

The application is a window-based program, which is consisted of seven tabs, including **Status**, **Configuration**, **Encryption**, **Site Survey**, **IBSS**, **Domain**, and **About**. The following figure displays the **Wireless Settings** dialog box.

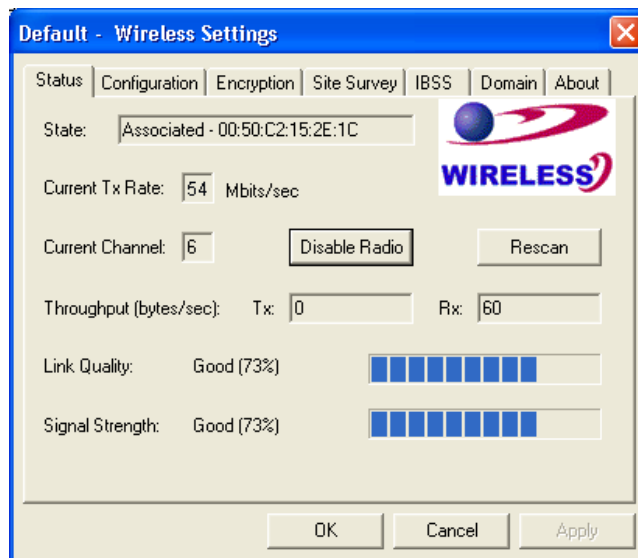


Figure 4.3-1: The **Wireless Settings** Dialog Box

Check the desired items below to obtain more details about these tabs.

The Status Tab

In the **Wireless Settings** dialog box, click the **Status** tab to appear the following display. Here presents the status of your current connection. To close the window, click **OK**.

Note: Choosing the **Wireless Network Status** command from the right-click menu of **Wireless-G Configuration Tool** tray icon will launch this tab too.

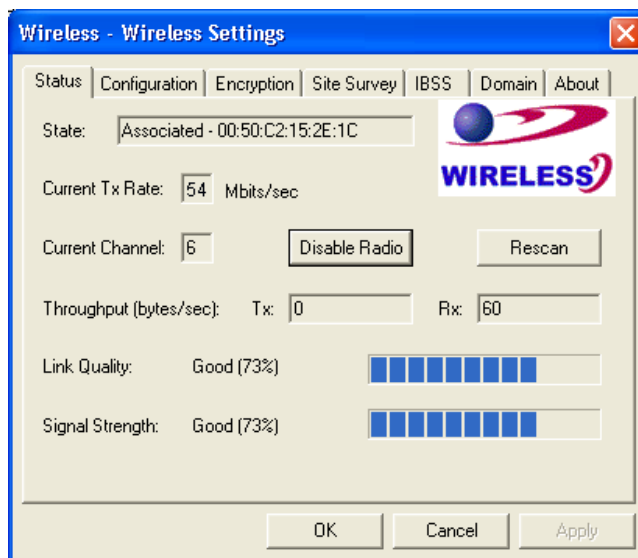


Figure 4.3-2: The **Status Tab**

Note: The texts before "Wireless Settings" in the caption bar of the dialog box is the profile name of the current connection. Thus, the caption contexts vary according to the connectivity at the given time. From the above picture, the associated profile is named "**Wireless**". For more information about profiles, please refer to the "**The Configuration Tab**" section in the manual.

From the window, the general information on the status of currently connected entry is presented. You may want to click the **Rescan** button to reinitiate the scanning process and update the status. Later the result of scanning will be renewed and displayed in the window. If you wish to stop the networking connection, click the **Disable Radio** button to stop scanning. Meanwhile, the **State** tab will indicate that the radio has been stopped and the remaining areas under this tab display either a zero or **Not Applicable**. However, if you are already in the disabled radio mode, you will find the **Enable Radio** button here instead. Click **Enable Radio** to regain the link then.

State

Here displays the MAC Address of the current associated entry, which could be a connected access point in the Infrastructure mode or computers joining in the Peer-to-Peer network.

AdHoc	The WLAN USB stick is operating in Peer-to-Peer mode. This field also displays the virtual MAC address used by computers participating in the Ad-Hoc network.
Associated	The WLAN USB stick is operating in Infrastructure mode. This field also shows the MAC address of the Access Point with which you are communicating.
Listening	Indicates that the adapter is listening on all allowed channels, but has not yet found a peer-to-peer or infrastructure network with which to associate.
Stopped	The radio has been stopped by the Disable Radio Button.
Scanning	The WLAN USB stick is scanning for transmissions by other wireless adapters on all channels.
Associating	The WLAN USB stick is in the process of associating with a network.
Not Associated	The WLAN USB stick has not found any network with which to associate.

Current Tx Rate

This feature indicates the transmission rate of the current connection.

Current Channel

Here reveals the current channel operated in the wireless network. Note that the channel number differs as the radio scans any available channels in the Infrastructure mode.

Throughout (bytes/sec)

This feature indicates the rates of transmitting (**Tx**) and receiving (**Rx**) data of your Wireless 802.11g/b USB Stick within a short period of time; thus, the values vary on a time basis.

Link Quality

Link Quality is based on the percentage of successfully transmitted or received signal of the

associated access point beacon within a limited period. The higher the percentage, the better the link quality. The bar graph beside also provides a visual interpretation of the current link quality. It is noted that the **Link Quality** and **Signal Strength** features only apply to the Infrastructure mode. They are inapplicable in the Ad-Hoc mode since data will be transferred from many different computers.

Signal Strength

You may learn the received signal strength of the baseband processor of the beacon signal from the **Signal Strength** bar beside, and it's also presented in terms of percentage. As the signal gets stronger, the signal percentage rate gets higher. It is noted that the **Signal Strength** and **Link Quality** features only apply to the Infrastructure mode. They are inapplicable in the Ad-Hoc mode since data will be transferred from many different computers.

The Configuration Tab

Click this tab to edit different profiles for different network configurations. When finish changing the settings, please click **Apply** to perform the new configuration at last.

Note: Choosing the **Advanced Configuration** command from the right-click menu of **Wireless-G Configuration Tool** tray icon will launch this tab too.

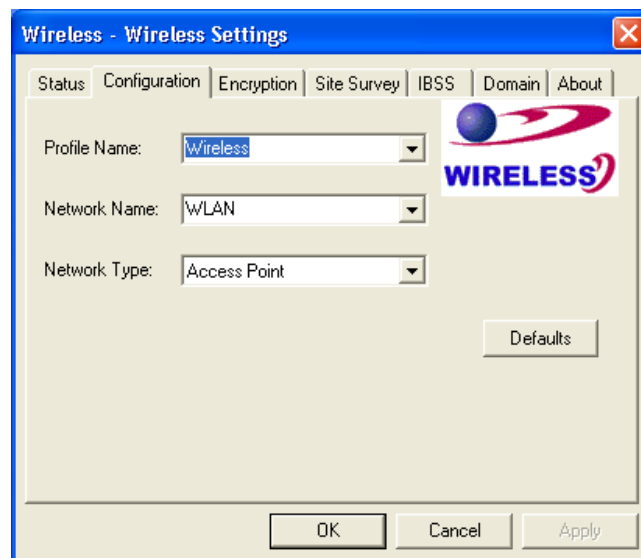


Figure 4.3-3: The **Configuration** Tab

Profile Name

A profile is a named set of operating parameters for your Wireless 802.11g/b USB Stick. By clicking the down arrow at the right of this item to display any available profiles for your Wireless 802.11g/b USB Stick. You may set values for the chosen pre-defined profile. When you finish setting up the new changes, choose **Apply** to save the profile.

To identify a new profile, enter texts in the **Profile Name** field. After defining the configurations below,

click the **Apply** button to establish a new profile. To switch between any existing profiles, click the arrow button at the right of the **Profile Name** field to open the pull-down menu and then select an intended one from it.

Note: You will have at least one profile named **Default**. When selecting any link from the list under the **Site Survey** tab, you have already automatically established a new profile for it under the **Configuration** tab.

Network Name

Network Name, also known as SSID (Service Set Identifier), must be unique to distinguish itself as a particular wireless network, while all wireless points in this network area share the same SSID. Type the identical SSID in the **Network Name** field to associate with access points or stations within the specified wireless LAN. To change the **Network Name**, highlight the texts in the box, edit a new SSID, and then click **Apply** to save the changes.

Network Type

Two network types are offered here: **Access Point** and **Peer-to-Peer**. Choose an intended type from the two options. The **Access Point** mode, which is also known as the Infrastructure mode, allows you to communicate with a wired network via an access point. If you attempt to operate this mode, you must indicate the identical **Network Name** to make a communication with the intended access point. On the other hand, the **Peer-to-Peer** mode provides you with the so-called Ad-Hoc communication, which means each wireless-equipped computers within a group is able to connect with each other as an independent wireless LAN without the use of an access point. Each station within this Ad-Hoc network has to define the same **Network Name**.

Peer-to-Peer Channel

This command is only available while you are operating the **Peer-to-Peer** mode, the so-called Ad-Hoc mode. Specify the operating radio frequency channel from the pull-down menu if you are the creator of the wireless network. If you are the joiner, just configure the SSID and click **Apply**. Note that the available channels differ from country to country, and the channel number must be the same between the entries/stations within the range, so that each can communicate with each other. While in the **Access Point** mode, the channel number would be the same as the associated access point. Thus, there's no need to manually set up the value.

Transmit Rate

This command allows you to indicate the rate of transferring the data packet from the associated access point or any nodes within the range. There are four options for you: **Auto 1 or 2 Mb**, **5.5 Mb**, **11 Mb**, and **Fully Automatic**. Specify the rate from the provided options according to the speed of your wireless network, or you may simply choose **Fully Automatic** to set the best available rate according to the received signal quality and the capabilities of the associated access point or station.

The Encryption Tab

Click the **Encryption** tab to define the encryption settings for a specific profile. It offers you various options concerning the so-called WEP (Wired Equivalent Privacy) to maintain the secure management in a wireless LAN environment. See the explanations below for more details, and before making any activation of the new settings, click **Apply**. To leave the window, click **OK**. To undo the new settings, select the **Cancel** button.

Note: Choosing the **WEP Encryption** command from the right-click menu of **Wireless-G Configuration Tool** tray icon will launch this tab too.

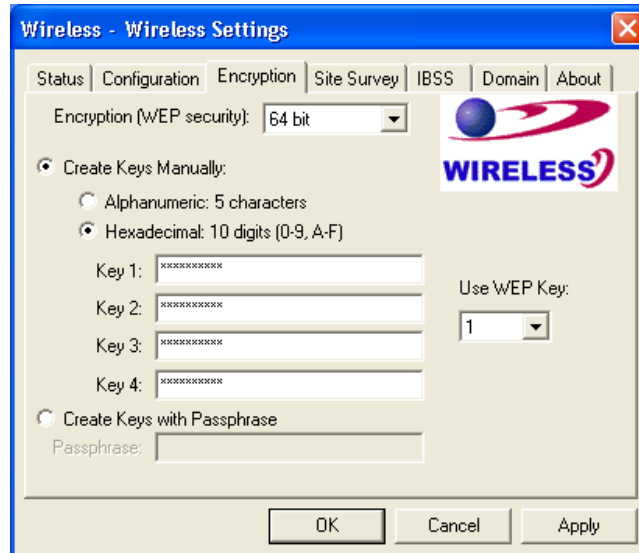


Figure 4.3-4: The **Encryption** Tab

Encryption (WEP security)

If you choose **Disabled** from the pull-down list, you will have the wireless LAN USB stick communicated with all stations within the same networking community without any data encryption. Otherwise, two key lengths are offered: **64 bit** and **128 bit**. Specify a preferred one from the two, so that you may use the identical WEP key to make a communication with the chosen access point.

Create Keys Manually

Once you set the **Encryption** type as **64 bit** or **128 bit**, you may choose to edit WEP keys manually or create them via the passphrase of your wireless network. If you choose the **Create Keys Manually** option, you may directly enter up to 4 WEP keys for use in WEP encryption. To generate the WEP keys, please define the key entry method as **Alphanumeric** or **Hexadecimal** (for hexadecimal characters, only digits 0-9 and letters A-F are valid). Then edit the texts in the blank fields below, from **Key 1** to **Key 4**, as the encryption codes. Note that these codes/keys shall be identical between the wireless nodes within the range and the access point only. Check the table below to find valid key length of each encryption type:

	64 bit	128 bit
Alphanumeric	5 characters	13 characters
Hexadecimal	10 digits	26 digits

Use WEP Key

Indicate which WEP key you intend to apply to activate the WEP encryption from the pull-down menu. Make sure that the intended access point on the wireless network shares the same keys. By default, **Key 1** will be used.

Create Keys with Passphrase

Choose this command when the associated wireless network uses a passphrase to create WEP keys. Enter the passphrase string in the **Passphrase** field to generate four encryption keys in the **Key** fields above. Note that only letters A-F are valid for the **Passphrase** feature.

Note: When entering the passphrase here, ensure that you have specified an accurate type of the **Encryption (WEP security)** above according to the associated agent's configuration. Otherwise, the inaccuracy will cause any failure of performance.

After finish configuring the **Encryption** features, remember to click **Apply** to initiate the new settings.

The Site Survey Tab

First of all, while entering this tab, please do choose the **Rescan** button to reinitiate the scanning process and update the list. Later the result of scanning will be renewed and displayed afterwards. From the offered information, you may learn the general information on the status of current scan lines, including BSSID, SSID, signal strength, the channel number, WEP type, and network type.

In addition, to directly make an association with any site on the list, double-click the **BSSID** field of the intended entry, and you will be led to the **Status** tab then.

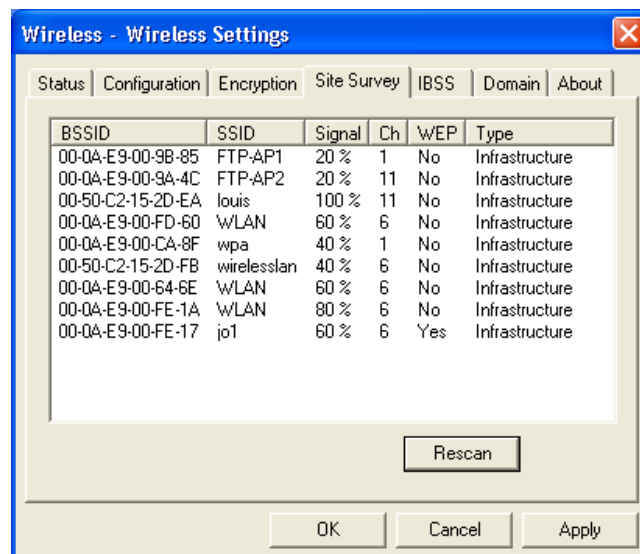


Figure 4.3-5: The **Site Survey** Tab

The IBSS Tab

If you, as a creator of the wireless network, are communicating with other stations via the IBSS (802.11 Ad-hoc) mode to form peer-to-peer networks, click the **IBSS** (Independent **B**asic **S**ervice **S**et) tab to specify an operating radio frequency channel from the pull-down list under the **IBSS Channel Selection** section.

Note: Choosing the **IBSS Channel** command from the right-click menu of **Wireless-G Configuration Tool** tray icon will launch this tab too.

Note that the available channels differ from country to country, and the channel number must be the same between the entries/stations within the range, so that each can communicate with each other. Or you may simply click **Defaults** to automatically determine the channel number for you. When done, click **Apply** to activate the new configuration.

On the other hand, while in the **Access Point** mode, you will find the channel number is the same as the associated access point. Thus, there's no need to manually set the value.

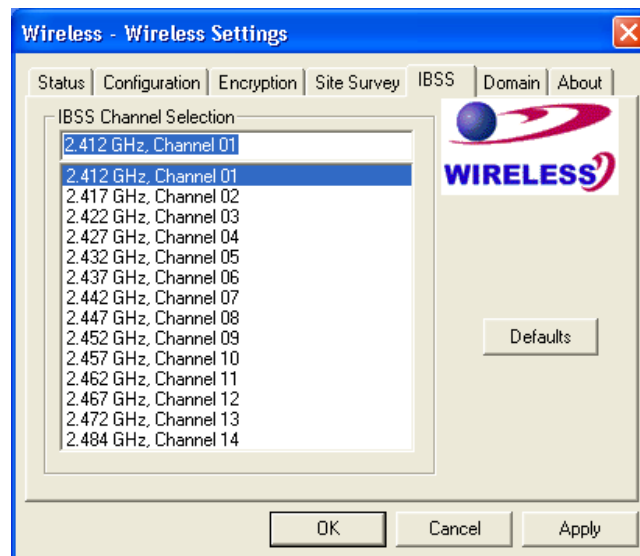


Figure 4.3-6: The IBSS Tab

The Domain Tab

While in the 2.4GHz range, the network operation may differ from country to country, or domain to domain. This is because the 802.11d protocol was established. To have the operation normally processed, choose the **Domain** tab to change relevant settings. Note that If you specify **Peer-to-Peer** as the network type, you must specify **None** in the **802.11d support** field.

Note: Choosing the **Country/Domain** command from the right-click menu of **Wireless-G Configuration Tool** tray icon will launch this tab too.

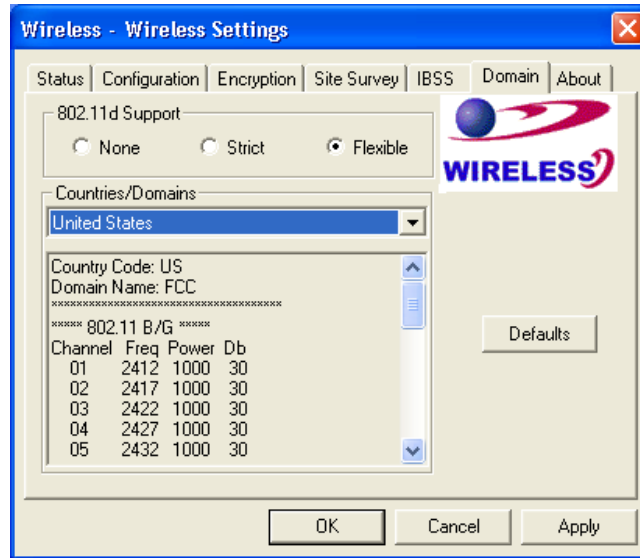


Figure 4.3-7: The **Domain** Tab

802.11d Support

802.11d Support lets you operate multi-country roaming. To automatically adjust regulatory domain while operating network in different countries, choose either **Strict** or **Flexible** according to your need.

Choosing **Strict** will allow your WLAN USB stick to communicate with the access points that provide 802.11d support. On this occasion, the WLAN USB stick scans all communications channels for an access point which provides information about the channels, frequencies, and power levels permitted in your location. Once it finds such an access point, the WLAN USB stick conforms its operations to these standards. The WLAN USB stick will not communicate with an access point that does not provide this information, nor will it join or create a peer-to-peer network.

On the other hand, if you choose **Flexible** in this field, your WLAN USB stick can communicate with any access point it finds. In this case, you must also choose the county in the **Countries/Domains** field which corresponds to your location. Your WLAN USB stick then searches for an access point that offers information about the channels, frequencies, and power levels permitted in your location. If it finds such an access point, the WLAN USB stick conforms its operations to these standards.

If you choose **None**, the task will be terminated.

Countries/Domains

If you choose **Flexible** above, go on defining the regulatory domain from the drop-down menu of this command according to the country you are located in. More detailed information about the defined country/domain will be listed below afterwards.

When you are done, remember to click **Apply** to let the new settings take effect.

The About Tab

This tab reveals general information on your wireless LAN USB Stick, including the following items.

Note: Choosing the **Version Information** command from the right-click menu of **Wireless-G Configuration Tool** tray icon will launch this tab too.

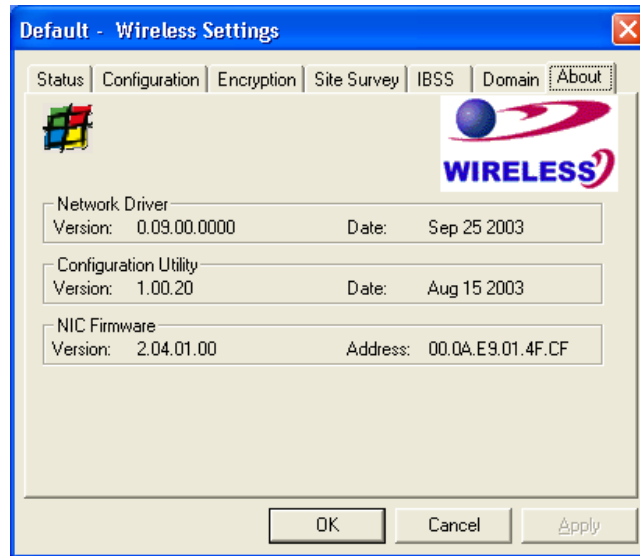


Figure 4.3-8: The **About** Tab

Network Driver

Displays the current version and released date of the Wireless 802.11g/b USB Stick's driver.

Configuration Utility

Displays the current version and released date of **Wireless-G Configuration Tool**.

NIC Firmware

Displays the current NIC card firmware version and the MAC (Media Access Control) address of your wireless USB Stick. It is consisted of 12-digit hexadecimal numbers (48 bits in length) to identify your computer's physical address on the local area network.

4.4 The Advanced Properties Tab

The **Advanced Properties** tab provides access to operating parameters for the network adapter which are not controlled by the configuration utility. These properties are accessed through the Windows hardware device manager. The following steps describe how to access these properties under Windows XP. For Windows 2000, the details may differ slightly; consult your operating system documentation or your system administrator. Also, the properties that appear in the list displayed by the device manager may differ depending on the adapter installed in your computer.

To display these properties, complete the following steps:

1. Right-click the **My Computer** desktop icon and choose **Properties** from the opened menu.
2. Choose the **Hardware** tab in the **System Properties** dialog box, and click **Device Manager**.
3. In the opened window, expand **Network adapters** to find the USB Stick – **802.11g/b WLAN USB(2.0) Adapter**. Right-click over the item and choose **Properties** from the opened menu.

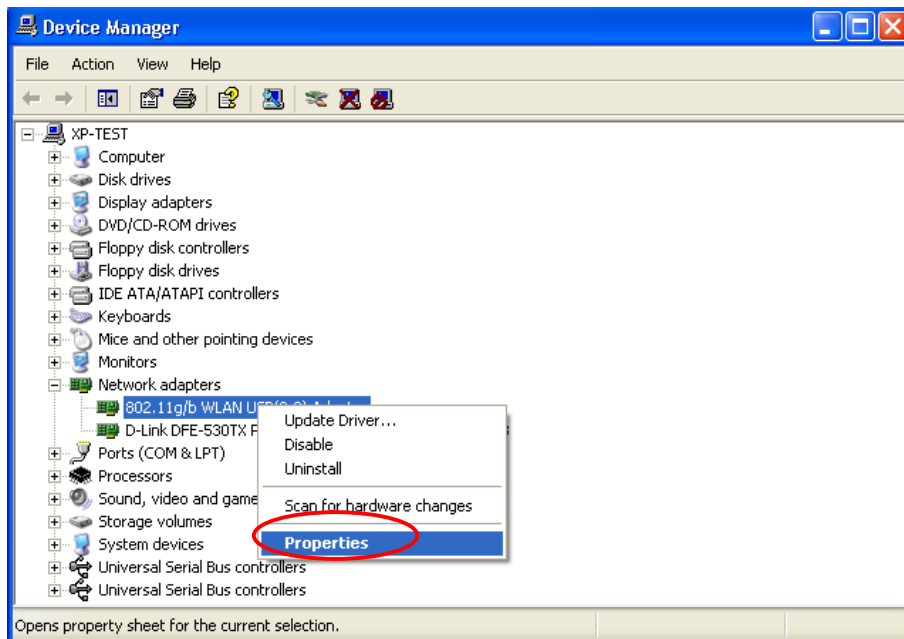


Figure 4.4-1: The **Device Manager** Dialog Box

4. When you click on the **Advanced** tab in the opened dialog box, a display similar to the following appears.

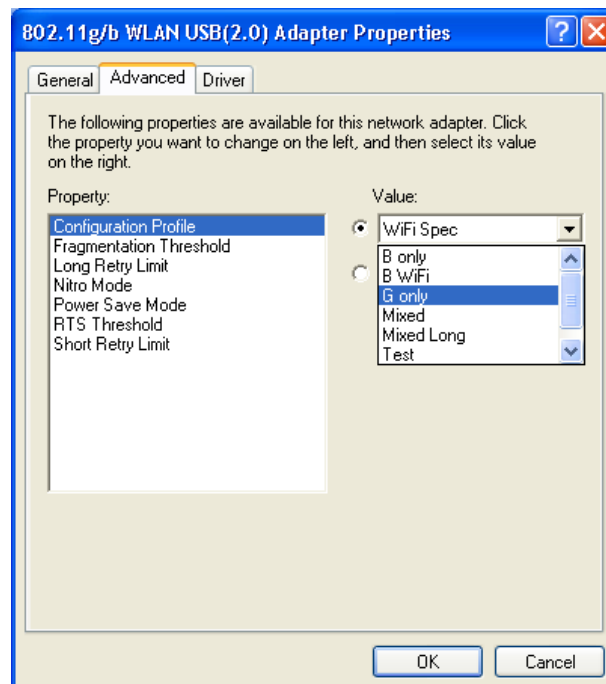


Figure 4.4-2: The **Advanced** Tab

You shall see the value for any of these properties by clicking on an item displayed in the **Property** field. If a value has been set for the property, it appears in the **Value** field to the right of the list. You may click to specify the **Value** settings from the offered drop-down list. To change a numeric value, simply move the mouse pointer to the **Value** field and click once with the left mouse button to highlight and type the value for the property according to your needs. Choosing **Not Present** under the **Value** field will disable a value.

The following section explains the items in the **Property** list displayed by this tab.

Configuration Profile

Specify a pre-defined profile with standard parameters from here. The provided profiles include:

- ☐ **B only** – for operation in 802.11b environments only
- ☐ **B WIFI** – for operation in 802.11b environments conforming to WiFi standards
- ☐ **G only** – for operation in 802.11g environments only
- ☐ **Mixed** – for operation in either 802.11b or 802.11g environments
- ☐ **Mixed Long** – for long-range operation in either 802.11b or 802.11g environments
- ☐ **Test** – for operation under the widest variety of 802.11 conditions

Fragmentation Threshold

The fragmentation threshold defines the size (in bytes) at which a packet is split into smaller packets for transmission. You can enter a value from 256 to 2432 in increments of 128. Normally, you should disable this property unless directed otherwise by your Network Administrator.

Niro Mode

This feature may increase data throughput over the WLAN and is particularly effective in mixed 802.11b/g environments. This property determines whether Nitro mode is enabled in your wireless USB Stick. A value of 0 (zero) disables this mode; a value of 1 (one) enables it.

Power Save Mode

This property turns the Station Power Save feature on or off, or sets it to Auto. When in **Auto** mode, the station enters Power Save based on the battery condition (XP only) on the host. **Power Save Mode** decreases the amount of power consumed by the adapter by powering off the radio for short periods. Enabling **Power Save Mode** trades off performance for battery life.

- ☐ **Auto Dynamic** – specifies Disable mode when on AC power and Dynamic mode when on battery
- ☐ **Auto Maximum** – specifies Disable mode when on AC power and Maximum mode when on battery

Note: **Auto Dynamic** and **Auto Maximum** require NDIS 5.1 or later, typically available only on Windows XP.

- ❑ **Disabled** – specifies continuous access mode and is the default
- ❑ **Dynamic** – specifies a fast power saving mode that provides the best combination of performance and power usage
- ❑ **Maximum** – specifies the greatest power saving mode

RTS Threshold

The RTS threshold is the packet size (in bytes) at which packet transmission is governed by the RTS/CTS transaction.

You can enter a value from 0 to 2432 in increments of 64 for this property. Normally you should leave this property disabled unless directed otherwise by your Network Administrator.

The Long/Short Retry Limit

The **Long Retry Limit** or **Short Retry Limit** is the maximum number of retransmission of a data packet because of the failure of receiving CTS or ACK.

APPENDIX A: TROUBLESHOOTING

This section provides solutions to problems that you might encounter during the installation and operation of your Wireless 802.11g/b USB Stick. Please refer to the desired topics below and read the description to solve your problems.

Uninstall Wireless-G Configuration Tool and the Stick's Driver

Prior to starting the uninstalling, please make sure that **Wireless-G Configuration Tool** is closed, and then go along with the procedures below to entirely uninstall **Wireless-G Configuration Tool** and the Stick driver.

1. Right-click the **My Computer** desktop icon and choose **Properties** from the opened menu.
2. In the **System Properties** dialog box, click the **Hardware** tab, and then choose the **Device Manager** button.
3. In the opened window, expand **Network adapters** to find the USB Stick – **802.11g/b WLAN USB(2.0) Adapter**. Right-click over the item and choose **Uninstall** from the opened menu.

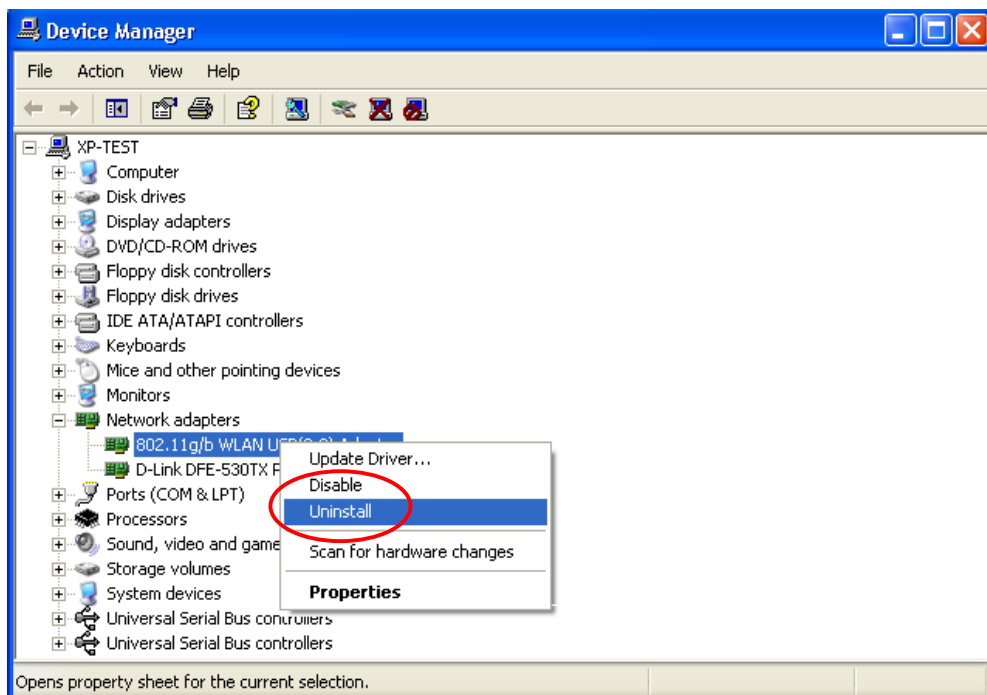


Figure 5-1: The **Device Manager** Dialog Box

4. In the **Confirm Device Removal** message box, click **OK** to proceed with the removal of the hardware.

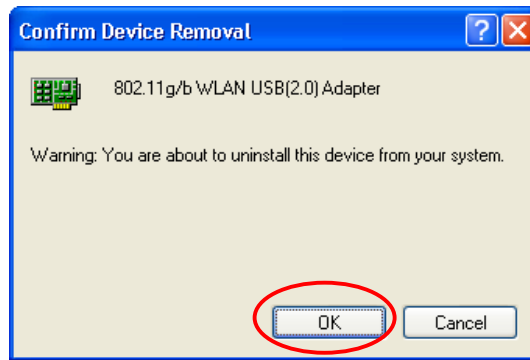


Figure 5-2: The **Confirm Device Removal** Message Box

5. Click **Start** on the taskbar and choose **Control Panel** from the **Settings** menu.
6. Select **Add or Remove Programs** to open the dialog box shown as below.

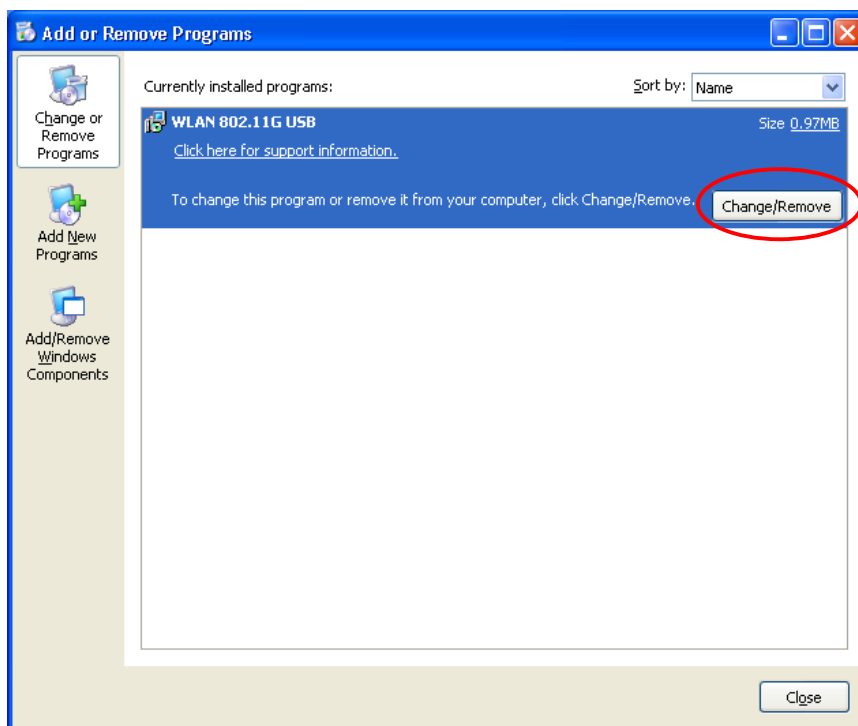


Figure 5-3: The **Add or Remove Programs** Dialog Box

7. Click the **Change/Remove** button under **WLAN 1802.11G USB**.
8. Please follow the on-screen instruction to complete the removal.

The Wireless 802.11g/b USB Stick Does Not Work Properly

If this happens, follow the guidelines below.

1. Right-click the **My Computer** desktop icon and choose **Properties** to open the **System Properties** dialog box.
2. Click the **Hardware** tab and then choose the **Device Manager** button.

3. In the opened window, find your USB Stick to see if the installation is successful. If you see a yellow exclamation mark beside the item, please go along with the steps below to reinstall the drivers.
4. Uninstall the software and hardware drivers from your PC. (Please refer to the previous topic for details)
5. Restart your computer and repeat the installation procedures as indicated in this chapter in this manual: **Installation of the Wireless 802.11g/b USB Stick**.
6. When finished, open the **Device Manager** window again to verify if the installation is approved. The yellow exclamation mark shall be removed for this time.

Upgrade WLAN-G Configuration Tool and the Stick's Driver

To upgrade the drivers for **WLAN-G Configuration Tool** and the Wireless 802.11g/b USB Stick, follow the procedures below. Please note that the details might be slightly different according to the Windows system you are using. Here we are taking the example of Windows XP.

1. Click **Start** on the taskbar and choose **Control Panel** from the **Settings** menu.
2. Select **System** to open the **System Properties** dialog box, and then under the **Hardware** tab, click the **Device Manager** button to open the **Device Manager** dialog box.
3. Double-click the **Other devices** item in the list to show the **USB 2.0 Device** icon, which is displayed with a yellow icon beside. Right-click the icon and choose **Update Driver** from the opened menu.

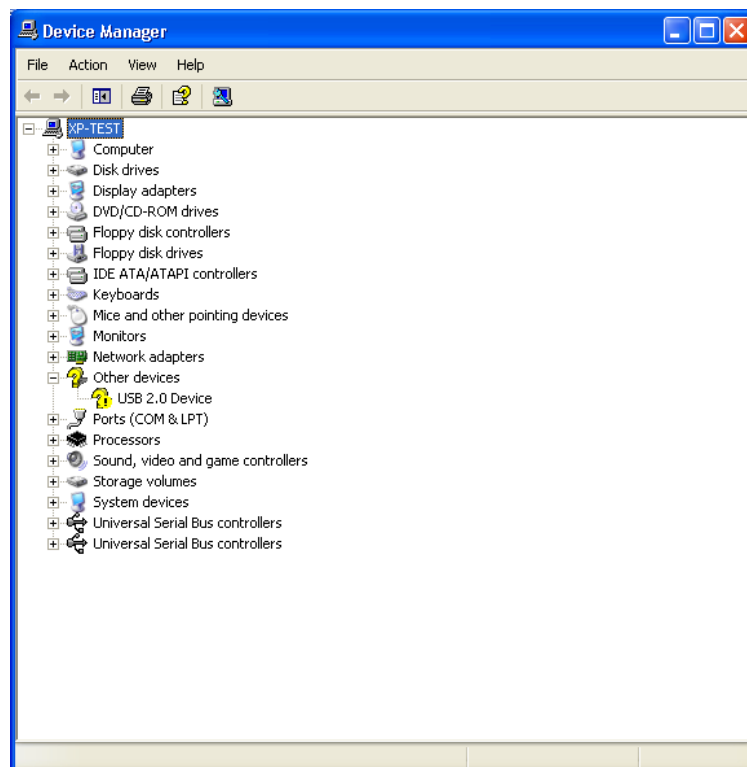


Figure 5-4: The **Device Manager** Dialog Box

4. In the **Hardware Update Wizard** dialog box, choose **Install from a list or specific location** [Advanced] and then click **Next** to continue.

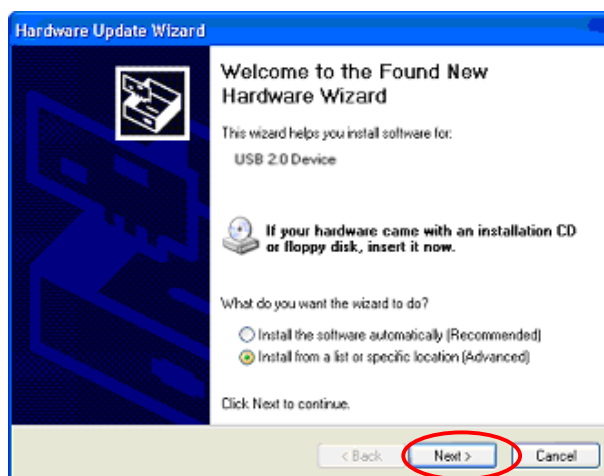


Figure 5-5: The **Hardware Update Wizard** Dialog Box

5. In the next dialog box, choose to define the path on the supplied CD, and then select the **Browse** button. From the **Browse For Folder** dialog box, find the directory named **Drivers** from the CD-ROM. After choosing the folder according to the system you are running, click **OK**. And then choose the **Next** button in the previous dialog box.

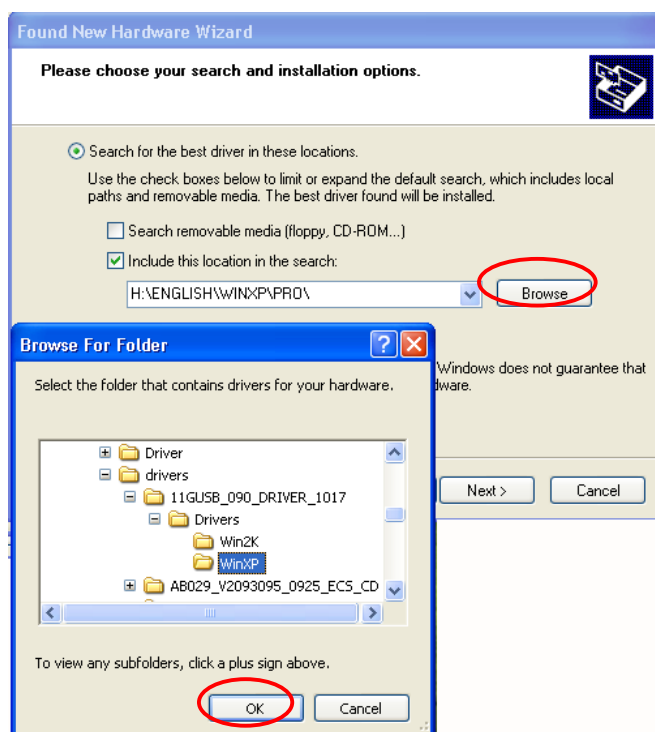


Figure 5-6: Choose the Folder Named **Install**

6. Choose **Continue Anyway** in the prompted **Hardware Installation** dialog box to proceed.



Figure 5-7: The **Hardware Installation** Dialog Box

7. When the following dialog box appears, your system is starting to install the software.

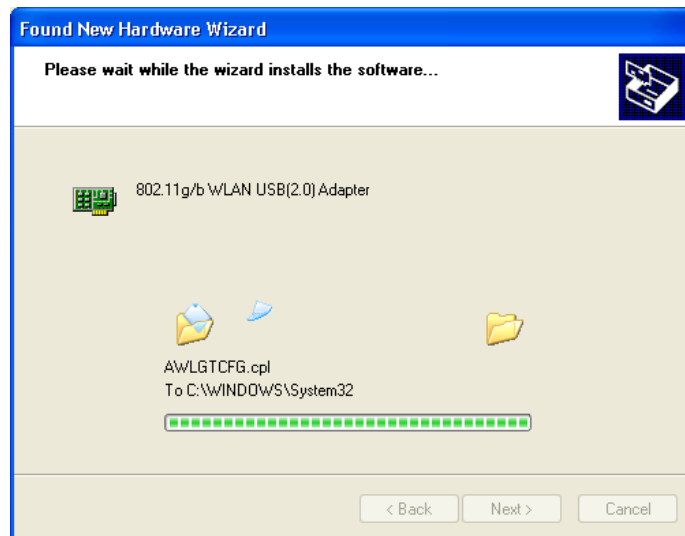


Figure 5-8: Installing the Software

8. In a few seconds later, you will see the following dialog box appeared. Click **Finish** to end up upgrading.

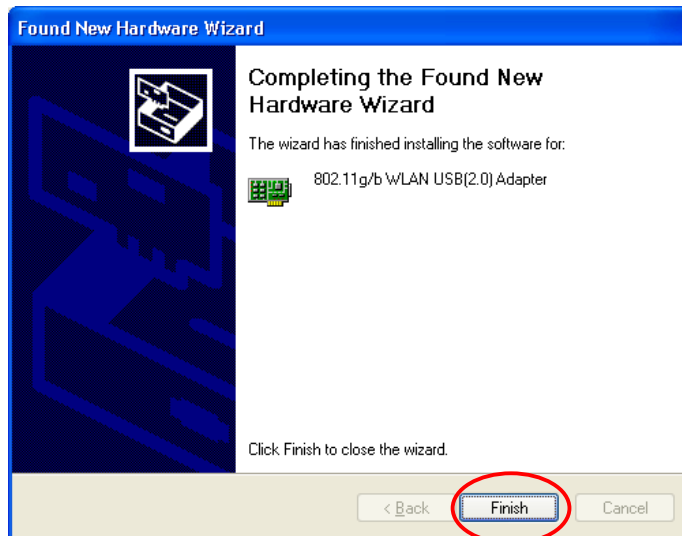


Figure 5-9: The **Complete** Screen

APPENDIX B: SPECIFICATIONS

Product Name	Wireless 802.11g/b USB Stick
Host Interface	USB2.0
Standards	IEEE 802.11, IEEE 802.11b, IEEE 802.11g
Frequency Band	2.400 ~ 2.4835GHz (subject to local regulations)
Current Drain	Power save mode=15mA, Standby mode=7mA, Transmit mode=370mA, Receive mode=340mA
Spreading	DSSS (11b), OFDM (11g)
Operating Voltage	5.0 V $\pm$ 5%
Data Rate	1Mbps, 2Mbps, 5.5Mbps, 6Mbps, 9Mbps, 11Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Transmit Power	802.11b $\geq$ 17dBm 802.11g 6/9Mbps $\geq$ 17dBm 12/18Mbps $\geq$ 15dBm 24Mbps $\geq$ 14dBm 36Mbps $\geq$ 14dBm 48Mbps $\geq$ 12dBm 54Mbps $\geq$ 12dBm
Receive Sensitivity	802.11b 8% FER@1Mbps $\leq$ -91dBm 8% FER@2Mbps $\leq$ -88dBm 8% FER@5.5Mbps $\leq$ -85dBm 8% FER@11Mbps $\leq$ -83dBm 802.11g 10% PER@6Mbps $\leq$ -88dBm 10% PER@9Mbps $\leq$ -87dBm 10% PER@12Mbps $\leq$ -84dBm 10% PER@18Mbps $\leq$ -82dBm 10% PER@24Mbps $\leq$ -79dBm 10% PER@36Mbps $\leq$ -75dBm 10% PER@48Mbps $\leq$ -69dBm 10% PER@54Mbps $\leq$ -68dBm
Modulation	CCK (11b), BPSK, QPSK, 16-QAM, 64-QAM (11g)
Security	64/128 bit WEP Encryption 802.1x, WPA (Windows XP SP1 and Windows 2000 SP4 only)
Internal Antenna Type	Single Chip Antenna

Media Access Control	RF activity
Supplied Driver	CSMA/CA with ACK
Warranty	1 year
Temperature Range	0~65°C (Operating)
Humidity	Max. 95% Non-condensing
Operating Range	Open Space: up to 400meters; Indoor: up to 100meters The transmission speed varies in the surrounding environment.

APPENDIX C: GLOSSARY

802.11b – 802.11b is one of the IEEE standards for wireless LANs and specifies a data transfer rate of 5.5 and up to 11 megabit per second in the 2.4 gigahertz radio band. 802.11b is recently given other widespread names as Wi-Fi or Wireless Fidelity.

802.11g –

Ad-hoc Network – Ad-hoc network, also known as peer-to-peer network, means a wireless network which is composed only of stations. This type of network is created with a group of wireless-equipped computers. With the wireless devices, each computer, functioning as a server and a client at the same time, can establish a LAN to directly communicate with other computers without any access points involved. It is easy to set up a peer-to-peer network; however, because all stations must be within a specific distance in order to be capable of communicating with each other, it is also limited. Thus, such a type of network is widely used at small networking requirements, like between a few computers or devices at departmental scales.

IEEE – IEEE, the Institute of Electrical and Electronics Engineers, is the world's largest technical professional society and is consisted of more than 366,000 members in approximately 150 countries. As a leading authority on areas ranging from for computer engineering, biomedical technology and telecommunications, IEEE endeavours to set more than 800 active consensus standards till now and publish 30 percent of the world's literature in electrical engineering, computers and control technology.

Infrastructure Network – Infrastructure network allows you to communicate with wired LAN via an access point. Unlike Ad-hoc network that all wireless-equipped stations within the range may directly communicate with each other, clients of Infrastructure network can only transmit and receive data through the use of a central access point. The associated access point also provides communication with the wired network.

MAC Address – The MAC (Media Access Control) address is the serial number of your Network Interface card. It has been burnt into the chip and could not be changed. MAC address is thus unique. While a computer on the network is transferring data, its MAC address is also conveyed and attached to be part of the header of the data packets.

Roaming – Roaming is an ability to allow users from one cell (or BSS) to another without losing connection via a wireless device.

SSID – SSID, Service Set Identifier, is a 32-character unique identifier for a workgroup of the wireless network. An SSID of one WLAN should be different from that of others, so all access points and other devices intending to communicate with a specific WLAN cannot achieve successful network connectivity unless presenting the identical SSID. From some perspective, an SSID performs as a kind of password to supply a measure of security on the WLAN. However, if an access point is configured to “broadcast” its SSID, this essential security is no longer remained. An SSID is also known as a Network Name.

USB – USB, standing for Universal Serial Bus, was designed to make a connection between the computer and its peripherals, such as keyboards, scanners, webcams, printers, etc., via an easy operation of plug-and-play. USB has proved to be a good solution that allows users to quickly and easily connect and add peripherals to computers. Through the USB interface, there’s even no need to turn the computer off while adding new peripherals mentioned above to a computer. Due to its convenience and simplicity, USB has won worldwide popularity, and most peripherals for computers these days are designed for the USB standard.

WEP – Wired Equivalent Privacy (WEP) is a security mechanism for wireless local area networks. It is designed for 802.11 standard to offer an equal level of security as that of a wired LAN. Through the configurations of encryption, WEP aims to provide security while the nodes with wireless devices are transferring or receiving data packets over radio waves.

WLAN – Wireless local area network (WLAN) receive and transmit data over the air by using radio frequency (RF) technology. The vital significance of WLAN is it minimizes the requirements for wired connections and provides not only data connectivity but also user mobility. Without the constraint of physical location, wireless LAN allows clients to transmit and receive data via high-frequency radio waves rather than wires.